

STATE OF ILLINOIS
ILLINOIS COMMERCE COMMISSION

Illinois Commerce Commission)	
On Its Own Motion)	
)	
vs.)	Docket No. 03-0703
)	
Northern Illinois Gas Company)	
d/b/a Nicor Gas Company)	
)	
Reconciliation of revenues collected under)	
gas adjustment charges with actual costs)	
prudently incurred.)	

Revised Surrebuttal Testimony of

CHRISTOPHER G. GULICK

Managing Director, Berkeley Research Group

On Behalf of
Northern Illinois Gas Company
d/b/a Nicor Gas Company

December 5, 2014

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1 **I. INTRODUCTION AND QUALIFICATIONS**

2 **Q. Please state your name and business address.**

3 A. Christopher G. Gulick, 2200 Powell Street, Ste. 1200, Emeryville, California 94608.

4 **Q. By whom are you employed?**

5 A. Berkeley Research Group, LLC, otherwise known as BRG.

6 **Q. What is your current position with BRG?**

7 A. I work as a Managing Director in the firm's energy practice.

8 **Q. Please describe BRG.**

9 A. BRG is a leading global strategic advisory and expert services firm that provides
10 independent expert analysis and testimony, litigation and regulatory support, authoritative
11 studies, strategic advice, and document and data analytics to major law firms, Fortune
12 500 corporations, government agencies, and regulatory bodies around the world.

13 **Q. Please describe the focus of your consulting work and your qualifications.**

14 A. My consulting work focuses primarily on economic and operational issues in the field of
15 energy, mostly in the natural gas and oil sectors. I have worked in the energy industry
16 since 1981 in a number of capacities. While employed by public utilities and their
17 affiliates, I worked in the areas of natural gas operations, with responsibilities for natural
18 gas supply planning and demand forecasting, natural gas resource portfolio management
19 (pipeline, underground storage, LNG, and propane), and gas control. I was also involved
20 in business development, market analyses, energy price forecasting, and corporate
21 acquisitions of natural gas and oil distribution companies. In my consulting role, I have
22 worked on a number of engagements related to the natural gas, liquefied natural gas

23 (“LNG”), oil, and electric industries, including the evaluation of planned LNG terminals,
24 the acquisition of natural gas supplies and pipeline transportation capacity, and
25 specification of risk management systems. I have testified before regulatory agencies,
26 state and federal courts, and arbitration panels on commercial and operational issues. I
27 hold an M.B.A. from Boston College and a B.A. in Economics (magna cum laude) from
28 the University of Massachusetts at Boston. My curriculum vitae (“CV”) is attached as
29 Nicor Gas Exhibit 7.1.

30 **Q. Have you ever testified before the Illinois Commerce Commission?**

31 A. Yes. I provided written and oral testimony before the Illinois Commerce Commission
32 (“ICC” or the “Commission”) in Docket Nos. 01-0705, 02-0067, and 02-0275,
33 consolidated. My additional testifying experience can be found in my CV.

34 **II. PURPOSE OF TESTIMONY**

35 **Q. What is the purpose of your testimony in this proceeding?**

36 A. I have been asked by Northern Illinois Gas Company d/b/a Nicor Gas Company (“Nicor
37 Gas” or the “Company”) to review the rebuttal testimony of Commission Staff (“Staff”)
38 witness Dr. David Rearden (Rearden Reb., Staff Ex. 4.0) and the rebuttal testimony of
39 Citizens Utility Board (“CUB”) witness Mr. Jerome Mierzwa (Mierzwa Reb., CUB Ex.
40 2.0), and provide an objective assessment of two questions. First, did the Company’s
41 actions in providing Hub services in 2003 cause an increase in the cost of gas paid by
42 Nicor Gas’ PGA customers? Second, were Nicor Gas’ decisions in 2002 and 2003 to use
43 its intra-state, aquifer storage facilities to provide Hub services during the 2002-03 winter
44 made with the understanding that revenues retained by the Company would increase and

that gas costs paid by the PGA customers would increase? I considered these questions in light of the available information.

Q. What are your conclusions?

A. Based on my review of the rebuttal testimony of Dr. Rearden and Mr. Mierzwa, I reached the following conclusions. First, the Company's decisions to provide Hub services in 2002 and 2003 did not cause an increase in the cost of gas paid by Nicor Gas' PGA customers. Second, Nicor Gas' decisions in 2002 and 2003 to use its intra-state, aquifer storage facilities to provide Hub services were made with the understanding that (i) revenues retained by the Company could increase, (ii) revenues would be credited to the PGA customers through a then-existing regulatory procedure, and (iii) there would be no effect on the cost of gas charged to the PGA customers. These conclusions lead me to recommend that the Commission accept the Company's PGA reconciliation, and reject the Staff and CUB recommendations to disallow recovery of gas costs alleged to be related to Hub activity.

In reaching these conclusions, I also concluded that:

- Nicor Gas personnel reasonably determined that Hub services, such as parks and loans, did not impose any additional costs on their PGA customers.
- Nicor Gas' PGA gas inventories did not subsidize the cost of making Hub loans; the data contained in the Aquifer Reports showed that Hub inventories were accounted for with third party inventories.
- Nicor Gas personnel correctly understood that allocating available storage capacity to Hub services likely would result in additional revenues that would be credited to the firm customers through either the PGA mechanism or in a base rate proceeding.
- The Hub service transactions were useful tools for managing physical storage inventories and protecting the operating reliability of the aquifer storage fields.

- The Company provided Hub services in a manner consistent with the applicable regulations that existed at the time.

Q. Please describe the remainder of your testimony.

A. In the remainder of my testimony, I first provide my opinion on the proper application of the PGA rule. I then address general concerns common to the rebuttal testimonies of Dr. Rearden and Mr. Mierzwa, before addressing specific deficiencies in their respective testimonies. Next, I provide an explanation of volumetric storage accounting, and show how operational park-and-loan activities (*e.g.*, Hub services) do not affect the quantity or cost of gas in Nicor Gas' PGA inventories. This is followed by a brief review of the Hub services, including the regulation of the cost of providing those services. I then conclude with a brief review of my rebuttal testimony, and a summary of my conclusions and recommendations.

III. APPLICATION OF THE PGA RULE

Q. Given the Commission's prudence standard, how should the Commission apply Section 525.40(d) of the Commission's PGA rule regarding the gas cost expenses under review in this docket?

A. In my opinion, the application of the PGA rule falls under the umbrella of the prudence standard, as articulated by the Commission, and should be applied in that context. Like the prudence standard, the PGA rule is also forward-looking, and should be applied in that manner. Section 525.40(d) states, in part:

Taking into account the level of additional recoverable gas costs that must be incurred to engage in a given transaction, *the utility shall refrain from entering into any such transaction that would raise the Gas Charge(s).*

83 Ill. Adm. Code § 525.40(d) (emphasis added).

95 This element of the rule refers to the consideration that a utility needs to make
96 *before* engaging in a transaction because a utility can only refrain from entering into a
97 transaction that has not yet occurred. When combined with the requirements of the
98 Commission’s policy, any consideration of whether the rule was violated should consider
99 both management judgment and then-available information. Specifically, an evaluation
100 of whether the rule was violated “should be based upon the circumstances encountered by
101 utility management at the time decisions had to be made.”¹ Therefore, any consideration
102 of Nicor Gas’ prudence should (i) include Nicor Gas’ operating decision to cycle storage
103 for reliability purposes, (ii) include Nicor Gas’ determination that the Hub loans were
104 essentially costless, (iii) exclude a *post hoc* evaluation of Nicor Gas’ gas dispatch during
105 a unique operating period, and (iv) exclude gas prices that became known only after
106 Nicor Gas’ decision to make Hub loans.

107 **IV. GENERAL CONCERNS COMMON TO STAFF AND CUB REBUTTAL**
108 **TESTIMONIES**

109 **Q. What elements of Dr. Rearden’s rebuttal position are also common to Mr.**
110 **Mierzwa’s position?**

111 **A. There are three assumptions underlying both Dr. Rearden’s and Mr. Mierzwa’s rebuttal**
112 **testimonies that I believe are flawed.**

- 113 • First, they assumed that Nicor Gas’ PGA storage withdrawals were intentionally
114 reduced in order to support an ability to make Hub loans. Both of these witnesses
115 relied upon this assumption to support their conclusions that the decision to make
116 Hub loans was driven by Nicor Gas’ desire to increase the revenues retained by
117 the Company.
- 118 • Second, both witnesses assumed that the Hub loans directly reduced Nicor Gas’
119 ability to withdraw storage, which resulted in Nicor Gas purchasing more
120 expensive flowing gas for its PGA customers.

¹ See Dr. Rearden’s response to NG Staff 2.07(a) (attached as Nicor Gas Ex. 7.2).

- 121 • Third, they both assumed, without verification, that Nicor Gas incurred
122 commodity-related costs that were directly related to making the Hub loans.

123 In my review of their respective rebuttal testimonies, I concluded that neither Dr.
124 Rearden nor Mr. Mierzwa objectively tested their assumptions.²

125 While the reasoning that grew from these assumptions differed, their analytical
126 approach was similar: they compared then-actual Chicago city-gate gas prices for select
127 dates during a portion of the Hub loan period³ to the actual gas prices for select dates
128 during the Hub re-fill period, and applied that price difference to the total Hub
129 withdrawals⁴, consisting of all types of Hub activity, as an estimate of the costs allegedly
130 shifted to PGA customers.

131 In addition to these flawed assumptions, there are a number of areas where Dr.
132 Rearden and Mr. Mierzwa used hindsight to evaluate Nicor Gas' decisions, but failed to
133 adequately consider historical information relevant to evaluating the prudence of Nicor
134 Gas' decisions, subsequent operational actions, or the resulting effects.

135 I critique the testimony of each witness in turn.

136 **V. SPECIFIC CRITIQUE OF DR. REARDEN'S TESTIMONY**

137 **Q. Please summarize Dr. Rearden's conclusions and recommendations.**

138 A. Dr. Rearden concluded that \$18.5 million in PGA gas costs, comprised of two separate
139 tranches, should be disallowed for separate reasons. He argued that the first \$8.2 million

² For example, see Dr. Rearden's responses to NG Staff 2.08 and 2.12(a) (attached as Nicor Gas Ex. 7.2).

³ Dr. Rearden used a period extending through June 12, 2003 and Mr. Mierzwa used a period extending through October 2003, neither of which included the entire time period of the loan transactions.

⁴ As discussed later in my testimony, Dr. Rearden did not separate PGA and non-PGA related Hub activity.

140 should be disallowed because he believes that PGA-related costs⁵ supported Hub
141 revenues, and that Commission precedent required that these Hub revenues be credited to
142 the PGA. He continued by arguing that the remaining \$10.3 million should also be
143 disallowed because he posited, without support, that the “cost” of making Hub loans was
144 the cost of the flowing gas purchased on those days that Hub withdrawals were made.⁶

145 **Q. Do you agree with the approach used by Dr. Rearden to determine his first**
146 **proposed disallowance?**

147 A. No. In supporting his first disallowance, Dr. Rearden relied upon two Commission
148 Orders – one entered in September 2005 and the other in March 2006 – that allocated all
149 Hub revenues to Nicor Gas’ PGA and transportation customers. As addressed in further
150 detail by Nicor Gas witness Elliott,⁷ it does not appear from Dr. Rearden’s testimony that
151 he considered the Commission Orders in effect in 2003, with which Nicor Gas was in
152 compliance.⁸ He also erred in assuming that Hub loans were made from gas purchased
153 by Nicor Gas for eventual sale to PGA customers. A review of the Aquifer Reports⁹
154 would have shown him that Hub loans were accounted for with third party gas
155 inventories, and did not impose additional costs on the PGA customers.¹⁰ In addition, he

⁵ Dr. Rearden explained that he considers PGA-related costs to be costs related to “gas that Nicor purchases and costs that are to be recovered through the PGA rate.” See Dr. Rearden’s response to NG Staff 2.05 (attached as Nicor Gas Ex. 7.2).

⁶ Like Mr. Mierzwa, he assumed that all Hub withdrawals were Hub loans, and did not consider any other Hub activity.

⁷ See Nicor Gas Ex. 8.0, 3:58-4:83.

⁸ By applying Commission Orders to a period in time when they were not in effect, Dr. Rearden’s proposed disallowance also smacks of retroactive ratemaking.

⁹ The Aquifer Reports are the monthly summaries used by Nicor Gas to track inventory positions in their owned and leased storage fields.

used all Hub activity in his analyses, and did not separate the PGA and non-PGA related Hub activities.

Q. Do you agree with the approach used by Dr. Rearden to determine his second proposed disallowance?

A. Again, no. The support for Dr. Rearden's second disallowance rested on his conclusion that Nicor Gas did not attempt to balance the cost of making a Hub loan against the revenue obtained. While Dr. Rearden made some attempt to consider the historical context of Nicor Gas' decisions, as described by Nicor Gas witness Gilmore,¹¹ his analysis relied on flawed assumptions and information that was only available to him (and Nicor Gas) well after early-2003. Dr. Rearden also offered up a novel notion of displacement, which he then relied upon to conclude that all dispatched gas was interchangeable, to support his view that the cost of Hub loans was equal to the cost of flowing gas during the period. None of his analyses adequately considered the historical context of Nicor Gas' decisions, the Hub rates, Nicor Gas' reliability requirements, or any operational requirements faced by Nicor Gas.

Q. Please explain your disagreement with Dr. Rearden regarding Nicor Gas' failure to evaluate the cost of Hub loans.

A. Dr. Rearden first assumed that Hub loans had to have been made from gas purchased for PGA customers. As I show later in my testimony, Hub loans did not come from inventories purchased for PGA customers. In fact, the Hub loans did not have any effect on the cost of gas paid by PGA customers.

¹¹ See Rearden Reb., Staff Ex. 4.0, beginning at 5:103.

177 Second, he assumed that the “cost” of the Hub loans was the price paid by Nicor
178 Gas for flowing gas on the days that Hub loans were made. As I discuss later, the
179 available data do not support this assumption. There is quite a bit of information that was
180 available to Dr. Rearden and CUB witness Mierzwa demonstrating that Nicor Gas
181 personnel explicitly considered the cost of Hub loans, and concluded that the “cycling of
182 loaned gas had no adverse impacts on the GSC”¹², and provided significant benefit to the
183 PGA customers.¹³ There are also a number of other documents that the Company
184 provided in response to data request CUB 5.01 that provide ample evidence Nicor Gas
185 personnel were well aware of the operational benefits and economic outcomes associated
186 with making Hub loans.¹⁴ Consideration of this information, combined with the facts that
187 (i) physical Hub loans were not made from PGA inventories and (ii) storage cycling was
188 needed to maintain reliability, demonstrates to me that making Hub loans was a prudent
189 action that was reasonably not expected to have an effect on the cost of gas paid by PGA
190 customers.

191 **Q. In Dr. Rearden’s testimony regarding the cost of Hub loans, did he consider that the**
192 **Hub activity was conducted pursuant to rates and tariffs in effect during 2003?**

193 A. In my reading of his testimony, no. Despite his awareness that Hub activity was
194 regulated by the ICC and the FERC,¹⁵ Dr. Rearden did not consider that the cost of Hub
195 activity was already embedded in the rates reviewed and approved by the ICC, and on file
196 with the FERC. He also did not consider that Nicor Gas was accounting for the Hub

¹² See Nicor Gas Ex. 7.3 at NICOR 005188 CONFIDENTIAL.

¹³ See Nicor Gas Ex. 7.3 at NICOR 005170-5185 CONFIDENTIAL.

¹⁴ This information runs from 1998 through December 2003, and indicates the existence of a continued awareness and consideration of management actions and the potent effects on the PGA gas costs (attached as Nicor Gas Ex. 7.3).

¹⁵ See Dr. Rearden’s response to NG Staff 2.01 (attached as Nicor Gas Ex. 7.2).

activity in a manner ordered by the ICC.¹⁶ As mentioned earlier, he instead proposed to apply a policy regarding the treatment of Hub revenues that the Commission did not approve until years later.

Q. What are your concerns about the manner in which Dr. Rearden analyzed Nicor Gas' 2003 activities?

A. Dr. Rearden did not evaluate Nicor Gas' decisions based on information available to Nicor Gas at the time the Hub loan decisions were made.¹⁷ He appeared to look only to what he assumed transpired in early-2003, after the fact, to support his conclusion regarding the prudence of Nicor Gas' decisions. While he did note various points, he did not incorporate an objective assessment of them. In particular, I observed the following examples of hindsight in his testimony:

- Used the gas dispatch that actually occurred in February and March 2003 – a dispatch that had to respond to a cold spell and a run-up in gas prices – as opposed to the gas dispatch planned prior to February and March 2003.
- Based cost and prudence analyses on gas prices that were only known after Nicor Gas had put gas supply, storage, and dispatch plans into place, and the actual dispatch had occurred.
- Relied on the resolution of Nicor Gas' 2004 rate case (effective October 2005), rather than the ICC rules in effect in 2003, to support the proposed disallowance of PGA costs.

¹⁶ See Dr. Rearden's response to NG Staff 2.02 (attached as Nicor Gas Ex. 7.2).

¹⁷ For an example of the forward looking nature of Nicor Gas' gas supply planning and purchasing strategy, see the Revised Direct Testimony of Leonard M. Gilmore at 9:180-10:207 (Gilmore Rev. Dir., Nicor Ex. 1.0R). In this same document, Mr. Gilmore also provides a description of the storage utilization policy. *Id.* at 11:232-12:254.

217 **Q. What relevant information did Dr. Rearden fail to consider in conducting his**
218 **analysis?**

219 A. Dr. Rearden did not appear to consider relevant information related to (i) the processes
220 Nicor Gas personnel used to determine how much storage capacity to allocate to the Hub,
221 (ii) Nicor Gas' consideration of the cost impact of Hub loans on PGA gas costs,
222 (iii) internal Nicor Gas review processes, and (iv) Nicor Gas' tariffs. (I note that Mr.
223 Mierzwa's testimony contained the same flaws on this point.) In one case, Dr. Rearden
224 misread a document as stating that an allocation of capacity to the Hub could result in the
225 Company being stuck with high priced gas in storage.¹⁸ On the contrary, that document
226 explained that the potential liability of being stuck "with high priced storage gas in
227 inventory" was associated with allocating capacity to the utility.¹⁹

228 His testimony contained, at most, a hat tip to the existence of this relevant
229 information, but no serious attempt to objectively integrate this information into his
230 analyses. In particular, Dr. Rearden did not address the very real operational benefits
231 regarding storage cycling and reliability laid out in Nicor Gas witness Leonard Gilmore's
232 rebuttal testimony or the significant economic benefits that accrued to the PGA
233 customers. Following are examples of information that he did not adequately consider:

- 234 • Information that the Company evaluated the cost and operational effects of Hub
235 loans prior to February and March 2003.²⁰
- 236 • Evidence showing that 60 percent of the Hub loans were in place as of December
237 31, 2002.

¹⁸ Rearden Reb., Staff Ex. 4.0, 17:368-370.

¹⁹ Nicor Gas Ex. 7.4 at NICOR 005162 CONFIDENTIAL.

²⁰ See, e.g., Nicor Gas Ex. 7.3 at NICOR 005188-5189 CONFIDENTIAL (memo), NICOR 005170-5185 CONFIDENTIAL (Hub Allocation Meeting); NICOR 005186-5187 CONFIDENTIAL (memo).

- 238 • Documentation that the Company had determined that Hub loans could be made
239 at no incremental cost to PGA customers.²¹
- 240 • The operational importance of cycling storage in order to maintain future firm
241 deliverability and reliability.²²
- 242 • Evidence that an internal review process of Hub activities existed.²³
- 243 • Information showing that Hub services were provided pursuant to approved cost-
244 based rates.²⁴
- 245 • The actual operating environment during the February and March 2003 time
246 period, including the brief gas price spike.

247 **Q. What is the significance of the last piece of information you mention, the gas price**
248 **spike in late winter 2003?**

249 A. The price spike late in the 2002-2003 winter drew a lot of attention. “In late February
250 2003, United States production-area prices for natural gas rose sharply and quickly in
251 response to physical market conditions leading to low supply and high demand for a short
252 time.” *Report on the Natural Gas Price Spike of February 2003*, Staff Investigating
253 Team, Federal Energy Regulatory Commission (July 23, 2003) (attached as Nicor Gas
254 Ex. 7.8). When Nicor Gas personnel were entering into the Hub loan transactions at issue
255 here, they could not have known about the gas price spike that would occur many months
256 later, as described in the Federal Energy Regulatory Commission (“FERC”) report. And,
257 even if Nicor Gas personnel had known that gas prices would increase dramatically in
258 late-winter 2003, they already had determined that Hub loans did not affect PGA costs.

²¹ *Id.*

²² *Id.*

²³ There is reference made to an additional review of proposed Hub transactions by the Nicor Gas Risk Committee that took place sometime after 2004 (Nicor Gas Ex. 7.3 at NICOR 005190-5191 CONFIDENTIAL), but it is my understanding that records of that review have not been located. While this review took place after the PGA reconciliation period at issue, I considered this document and documents from earlier periods to be clear evidence that a review process existed.

²⁴ Dr. Rearden’s response to NG Staff 2.01 (attached as Nicor Gas Ex. 7.2).

259 **Q. Dr. Rearden described displacement as how gas from one source could displace gas**
260 **from any other source, rendering the source of the gas immaterial from his**
261 **perspective.²⁵ Do you agree with this characterization?**

262 A. No. I do not agree with Dr. Rearden's characterization of displacement because in
263 industry practice and my experience, displacement commonly refers to a situation where
264 gas is injected into a system at a downstream location in order to affect the delivery of
265 gas at an upstream location. In essence, it is a physical exchange of gas where the
266 downstream injection "displaces" an equivalent quantity that is then delivered upstream.
267 Displacement, as used by Dr. Rearden, lacks the physical element commonly used in
268 industry practice, and implies that gas can be delivered anywhere on the Nicor Gas
269 system, even on portions of the system not physically connected.²⁶

270 **VI. SPECIFIC CRITIQUE OF MR. MIERZWA'S TESTIMONY**

271 **Q. Please summarize your review of Mr. Mierzwa's rebuttal testimony and**
272 **conclusions.**

273 A. The purpose of Mr. Mierzwa's rebuttal testimony was to respond to the rebuttal
274 testimony of Nicor Gas witness Gilmore. To provide context, Mr. Mierzwa observed in
275 his direct testimony that "[d]uring the summer of 2002, Nicor Gas accepted gas from
276 third parties for Non-PGA revenue Hub services, injected that gas into its on-system
277 storage facilities, and withdrew and returned that gas to these third parties by February

²⁵ Rearden Reb., Staff Ex. 4.0, 12:255-13:277.

²⁶ Dr. Rearden's characterization is more akin to virtual pooling, which is a feature more common to commercial gas transactions.

11, 2003.”²⁷ From this, he had concluded that “[t]hese transactions reduced the amount of on-system storage gas that was available for PGA customers in the winter of 2003.”

Going further in his rebuttal testimony, Mr. Mierzwa concluded, as a general matter, that it will always be unreasonable for Nicor Gas to provide Hub loans because winter gas prices are typically higher than summer prices.²⁸ This broad statement was conditioned on Nicor Gas being able to cycle storage without making Hub loans. Using a rather simplistic comparison, he then concluded that Nicor Gas could have substituted storage withdrawals for gas purchased.²⁹

In short, Mr. Mierzwa did not provide any analysis in support of these allegations because he did not believe any was needed.³⁰

Q. Do you agree with Mr. Mierzwa’s analysis?

A. No. Mr. Mierzwa’s analytical approach is overly simplistic and circular. For example, he concludes that it would always be unreasonable for Nicor Gas to make Hub loans unless Hub loans were needed for cycling, but then he has no way of determining whether cycling was necessary. In response to a data request seeking support for his assertion that the Hub loans reduced the amount of gas for PGA customers, Mr. Mierzwa stated that he “prepared no analyses or workpapers to reach the conclusion that Hub services reduced the storage gas available to PGA customers because no analysis or workpapers were necessary.”³¹ In support of this response, he stated that “[t]he total amount of storage service which Nicor Gas can provide is relatively fixed. Therefore, the

²⁷ Mierzwa Dir., CUB Ex. 1.0, 4:82-85.

²⁸ Mierzwa Reb., CUB Ex. 2.0, 3:10-15.

²⁹ Mierzwa Reb., CUB. Ex. 2.0, p. 5, Table 1.

³⁰ See Mr. Mierzwa’s response to NG CUB 3.03(a) (attached as Nicor Gas Ex. 7.5).

³¹ Nicor Gas Ex. 7.5 at NG CUB 3.03(a).

greater the amount of storage inventory used to support Hub services, the less the storage inventory available to serve PGA customers.”³² He stated further that he “did not investigate how much gas Nicor Gas could have withdrawn from storage in late-February and early-March 2003.”³³

Q. Do you agree with Mr. Mierzwa’s reasoning?

A. No. Mr. Mierzwa’s responses to data requests demonstrate that he does not understand the difference between storage inventory and storage deliverability.³⁴ While inventory levels do influence deliverability, a change in storage inventory *does not* necessarily result in a corresponding change in deliverability. Therefore, a lower overall aquifer inventory level does not result in a one-for-one reduction in the ability to withdraw gas from the storage fields. If Nicor Gas did not withdraw more storage gas for the PGA customers, it was not because Hub loans had reduced the PGA inventory (which they did not).³⁵ The more plausible and straightforward explanation is that Nicor Gas did not withdraw more storage gas to serve the demand of PGA customers because it had already committed to a planned dispatch, which likely included set quantities of firm pipeline purchases, or there was insufficient PGA demand.

Q. What are your opinions regarding Mr. Mierzwa’s rebuttal testimony?

A. After my review of Mr. Mierzwa’s rebuttal testimony, I was left with the following opinions. First, his rebuttal testimony fails to support his claim. I did not see any credible consideration of actual facts or events, as they existed in 2002, when Nicor Gas

³² Nicor Gas Ex. 7.5 at NG CUB 3.01.

³³ Nicor Gas Ex. 7.5 at NG CUB 3.03(b).

³⁴ Nicor Gas Ex. 7.5 at NG CUB 3.01 and NG CUB 3.03(a), (b).

³⁵ Note that Mr. Mierzwa’s analysis included all Hub withdrawals (not just the Hub loans), and ignored other third party storage activity. See Mr. Mierzwa’s response to CUB 3.03(c) (attached as Nicor Gas Ex. 7.5).

personnel began making decisions that would affect their subsequent actions in early-
2003. Second, he failed to provide testable analyses to support his assumptions that the
Hub activity reduced the quantity of gas that could be withdrawn from storage for the
PGA customers. Third, he confused storage inventory with storage deliverability, which
led him to assume that there was a one-for-one relationship between Hub loans and the
available deliverability for PGA customers from storage. And, he did not adequately
consider other third party storage activity. Finally, and as noted by Dr. Rearden, the *post
hoc* cost analysis he did provide rested on simplistic calculations using average prices. In
my view, Mr. Mierzwa's rebuttal testimony fails to support his proposed disallowance of
\$22.2 million in gas costs due to alleged imprudent decisions taken by Nicor Gas in
2002-2003.

**VII. SUMMARY OF UNDERGROUND STORAGE OPERATIONS AND
INVENTORY ACCOUNTING**

**Q. Do Dr. Rearden and Mr. Mierzwa properly consider Nicor Gas' gas storage
operating requirements as part of their analyses?**

A. No. Their rebuttal testimony fails to reflect the manner in which Nicor Gas must operate
its storage facilities.

Q. What is the type of underground storage facility operated by Nicor Gas?

A. Nicor Gas owns and operates aquifer gas storage reservoirs. Nicor Gas witness
Sherwood explains the attributes of this type of storage in his surrebuttal testimony
(Nicor Gas Ex. 6.0).

339 **Q. What actions do storage operators typically take to manage this type of storage**
340 **asset?**

341 A. In many cases, a tariff defines when and in what quantities the storage users can inject
342 and withdraw gas. Tariffs also require storage users to meet specified injection and
343 withdrawal quantities, regardless of the storage users' operational or economic self-
344 interest. An example of this can be seen in the Natural Gas Pipeline Company of
345 America LLC tariff covering DSS service. The DSS service, which is a delivered storage
346 service supported by aquifer storage fields, contains specific inventory targets, along with
347 related injection and withdrawal quantities, for various times during the year. These
348 reflect the operating characteristics of the storage field(s).³⁶

349 Storage operators that lack the ability to require their users to inject and withdraw
350 gas in a specified manner still have to meet the requisite operating characteristics of the
351 facilities they manage. Accordingly, they take actions to inject and withdraw gas as
352 dictated by the physical operating parameters of the storage field without regard to what
353 other party owns the gas being injected or withdrawn. These actions do not affect the
354 accounts of gas held in storage, or the rights of storage users to inject or withdraw
355 quantities of gas in accordance with their respective contracts and applicable tariffs.

356 **Q. Please explain the cost and quantity accounting for natural gas held in underground**
357 **storage facilities.**

358 A. The cost and volume accounting for physical underground storage inventories is
359 straightforward. Quantities of natural gas injected are added to existing inventories, and

³⁶ For the specific operating parameters of the DSS tariff, please see the NGPL tariff at Natural Gas Pipeline Company of America LLC, FERC Gas Tariff, Eighth Revised Volume No. 1, Version 0.0.0, Rate Schedule DSS Part 5.8.

360 withdrawals are subtracted. For any given storage account, the costs associated with
361 existing inventories, injections, and withdrawals are also recorded with the corresponding
362 quantities of gas.³⁷ The storage operator does not typically know the cost of the gas
363 stored by third parties.

364 Since natural gas is a fungible commodity, the specific gas molecules associated
365 with a given storage account are indistinguishable from those stored for the account of
366 another party; however, the storage operator has to manage physical inventories in order
367 to maintain the operational integrity of the storage fields.

368 Storage field operators (like Nicor Gas) also have to account for their customers'
369 activities, while managing the physical requirements of their storage facilities. This
370 means that injection and withdrawal cycles, maximum and minimum inventories, and
371 deliverability rates need to be managed *regardless* of the amount of gas held for the
372 accounts of its customers. As Nicor Gas witness Sherwood explains, it is very important
373 that the storage cycle be managed so that the integrity of the aquifer storage asset is
374 maintained and that the peak day deliverability is available, when required, on a peak
375 day.³⁸

376 **Q. Would you please provide an example of how physical inventory is tracked**
377 **separately from the inventory accounts?**

378 A. In order to illustrate this accounting process, I developed the following simple example
379 that has two accounts – one utility (the owner of the storage facility) that injects and
380 withdraws gas, and one utility customer that borrows gas from the storage operator and

³⁷ Nicor Gas uses last-in-first-out (“LIFO”) accounting on a calendar year basis, so the actual cost of gas withdrawn from storage in February is not known until the end of the calendar year.

³⁸ For Nicor Gas, this day is January 20th.

then replaces it. This table illustrates two important concepts. First, the quantity of gas in storage and the cost basis for the gas held in the Utility account are not affected by the utility lending gas to the customer. Second, the utility does not know the cost basis for the inventory position of the customer.

Table 1

Illustrative Example of Physical versus Accounting Storage Positions
(Values as indicated)

Line No.		Month 1	Month 2	Month 3	Month 4
1	Utility Company				
2	Inventory (MMBtu)	1,000,000	1,500,000	1,750,000	1,000,000
3	Cost of Gas	\$ 5,000,000	\$ 8,000,000	\$ 9,000,000	\$ 5,142,857
4	Average Cost/MMBtu	\$ 5.00	\$ 5.33	\$ 5.14	\$ 5.14
5					
6	Utility Customer				
7	Inventory (MMBtu)	500,000	(500,000)	(250,000)	500,000
8	Cost of Gas				
9	Average Cost/MMBtu				
10					
11	<u>Physical vs. Accounting (MMBtu)</u>				
12	Physical Gas in Storage	1,500,000	1,000,000	1,500,000	1,500,000
13	Delivery Obligation ¹	1,500,000	1,500,000	1,750,000	1,500,000
14	Difference	-	(500,000)	(250,000)	-

1/ This is the utility's delivery obligation, and it applies to positive inventories, only.

Q. What is the relevance of this example to this proceeding?

A. This example provides a simplified illustration of what happened when the Hub loaned gas to third parties. The inventory for the utility company reflects its discrete injections and withdrawals, including tracking the average inventory costs (assuming average cost accounting). The utility loans gas to the customer, which causes the inventory for the customer to be negative and reduces the physical quantity of gas in storage. However,

the utility's ability to withdraw gas to serve its customers does not change as a result. Further, as long as the customer's inventory is negative, the utility has no obligation to deliver additional quantities of gas to the customer until the customer injects sufficient gas so that the customer's inventory becomes positive. As can be seen, the difference in delivery obligation (line 14) is equal to the quantity of gas loaned to the customer.

Going back to Nicor Gas, the physical quantity of gas in the Nicor Gas storage fields changed as a result of making Hub loans, but the *accounting* for the amount of gas held by Nicor Gas' PGA and other storage customers did not. The negative inventory shown on the Aquifer Reports for the Hub indicated the amount of physical gas *owed* to the Nicor Gas storage fields, *not* to Nicor Gas' PGA account.

Q. Is this a typical practice in natural gas operations?

A. Yes. In my experience, operators routinely employ mechanisms such as operational balancing agreements (OBAs), interconnection agreements, park-and-loan services, and other load balancing services that help maintain the operational integrity of their systems, while meeting the needs of customers. Balancing services typically have a lower level of priority than firm services, allowing the pipeline to suspend balancing services during defined periods to maintain operational integrity and meet contractual commitments.

Q. Do the Nicor Gas Aquifer Reports show that Hub loans are supported by the Nicor Gas-owned gas inventories?

A. No. The Aquifer Reports show that Nicor Gas includes the accounting for the Hub activity in accounting for other third party gas inventories. In the following table, lines 2-9 are drawn from the Company's actual Aquifer Reports (which were available to Staff and CUB), and show the third party gas inventories, including the Hub loans (line 9).

The lines below that (lines 11-13) recombine the data from the previous lines to show the Hub and non-Hub gas inventories, and more clearly illustrate that the Hub loans reduce the physical amount of third party gas, not PGA gas, held in inventory.

Table 2

Nicor Gas Company
2003 Storage Month-End Activity
for Third-Party Gas (MMBtu)

Line No.		January	Net Inj/(Wdr)	February	Net Inj/(Wdr)	March
1	Per Aquifer Report					
2	Transportation Gas	12,313,977	(7,000,768)	5,313,209	5,778,757	11,091,966
3	Customer Select	4,546,875	(2,555,889)	1,990,986	(1,811,453)	179,533
4	Hub Gas	3,730,430	(7,640,532)	(3,910,102)	(4,038,948)	(7,949,050)
5	VA Power Troy Grove	4,000,000	(2,417,436)	1,582,564	(1,582,396)	168
6	EKT Prefill 2001	6,734,026	-	6,734,026	-	6,734,026
7	Oxy Prefill	5,059,732	-	5,059,732	-	5,059,732
8	BP Amoco - Company Use	278,913	(233,908)	45,005	361,044	406,049
9	Total Third-Party Gas	36,663,953	(19,848,533)	16,815,420	(1,292,996)	15,522,424
10						
11	Non-Hub Gas	32,933,523	(12,208,001)	20,725,522	2,745,952	23,471,474
12	Hub Gas	3,730,430	(7,640,532)	(3,910,102)	(4,038,948)	(7,949,050)
13	Total Third-Party Gas	36,663,953	(19,848,533)	16,815,420	(1,292,996)	15,522,424

- Q. Does the third party storage activity affect the quantity of gas stored by Nicor Gas for potential sale to PGA customers?**
- A. No. The third party storage activity does not affect the quantity of the gas stored by Nicor Gas for the PGA customers. As demonstrated in the following pages, Nicor Gas does not, as posited by Dr. Rearden, borrow gas from its PGA inventories to allocate storage capacity and inventory to the Hub. The following table illustrates this reality by comparing actual inventories to inventories assuming no Hub loan activity in the 2003 reconciliation period (line 23). Under this latter scenario, the lack of Hub activity would have increased the total gas in inventory (line 16) by an equal amount, resulting in no difference to Nicor Gas-owned inventory (line 29).

Table 3

Table 3 - Revised

Nicor Gas Company
2003 Month-End Storage Positions (MMBtu)

Line No.		January	February	March
1	Per Aquifer Report			
2	Gas in Aquifer Storage	70,059,242	42,879,803	31,654,623
3	Gas in Leased Storage	5,661,014	389,369	3,292,902
4	Reverse Parking	844,289	-	-
5	Sub-total	76,564,545	43,269,172	34,947,525
6				
7	Less: Third Party Gas			
8	Non-Hub Gas	32,933,523	20,725,522	23,471,474
9	Hub Gas	3,730,430	(3,910,102)	(7,949,050)
10	Sub-total	36,663,953	16,815,420	15,522,424
11				
12	Plus: Line Pack	549,673	549,673	549,673
13	Total Nicor PGA Gas	40,450,265	27,003,425	19,974,774
14				
15	Assume No Hub Activity			
16	Gas in Aquifer Storage	76,262,376	56,723,469	49,537,237
17	Gas in Leased Storage	5,661,014	389,369	3,292,902
18	Reverse Parking	844,289	-	-
19	Sub-total	82,767,679	57,112,838	52,830,139
20				
21	Less: Third Party Gas			
22	Non-Hub Gas	32,933,523	20,725,522	23,471,474
23	Hub Gas	9,933,564	9,933,564	9,933,564
24	Sub-total	42,867,087	30,659,086	33,405,038
25				
26	Plus: Line Pack	549,673	549,673	549,673
27	Total Nicor PGA Gas	40,450,265	27,003,425	19,974,774
28				
29	Change in Nicor PGA Gas	-	-	-

Sources: Aquifer Reports and Sherwood testimony (Nicor Gas Ex. 6.0, Figure 2)

433 **Q. Does this table show that Nicor Gas PGA gas in storage was being used to support**
434 **the Hub loans?**

435 A. No. It shows that the physical Hub inventory accounts are tracked with the other third
436 party gas accounts, and that changes in the Hub inventory levels do not affect the quantity
437 of PGA gas owned by Nicor Gas.

438 **Q. What other information demonstrates that the Nicor Gas' PGA inventory is not**
439 **affected by Hub loans?**

440 A. Relying on the data submitted by Nicor Gas in response to Staff data request GS-15
441 (attached as Nicor Gas Ex. 7.7), the following table shows that Nicor Gas' calculation of
442 its inventories is not dependent on Hub loans. In fact, Hub loans do not appear on this
443 table (or the supporting documentation) because they are not associated with any
444 particular party. The reader will note that the ending balance for Nicor Gas-owned gas
445 (column G) is the same value as reported in the previous table on line 13. Note also that
446 the ending balances for Customer-owned gas (column F) equal the values in the previous
447 table (line 10). These two tables demonstrate that providing Hub loans did not affect the
448 accounting for the quantity of Nicor Gas-owned gas in storage.

Table 4

Summary of Nicor Gas Company Inventory Balances
January - May 2003 (All values in MMBtu)

Line No.		A	B	C	D	E=A+B+C+D	F	G=E-F
		Physical Storage						
		Aquifer	Leased	Reverse Parking	Line Pack	Sub-total: Net Top Gas	Less: Third Party Gas	Equals: Nicor PGA Gas
1	January							
2	Starting Balance	105,236,954	12,316,777	-	549,673	118,103,404	53,962,106	64,141,298
3	Add: Injections	119,522	171,930	844,447	-	1,135,899	48,750	1,087,149
4	Less: Withdrawals	(35,297,234)	(6,827,693)	(158)	-	(42,125,085)	(17,346,903)	(24,778,182)
5	Ending Balance	70,059,242	5,661,014	844,289	549,673	77,114,218	36,663,953	40,450,265
6								
7	February							
8	Starting Balance	70,059,242	5,661,014	844,289	549,673	77,114,218	36,663,953	40,450,265
9	Add: Injections	15	58,514	158	-	58,687	-	58,687
10	Less: Withdrawals	(27,179,454)	(5,330,159)	(844,447)	-	(33,354,060)	(19,848,533)	(13,505,527)
11	Ending Balance	42,879,803	389,369	-	549,673	43,818,845	16,815,420	27,003,425
12								
13	March							
14	Starting Balance	42,879,803	389,369	-	549,673	43,818,845	16,815,420	27,003,425
15	Add: Injections	3,802,694	3,232,166	-	-	7,034,860	6,139,801	895,059
16	Less: Withdrawals	(15,027,874)	(328,633)	-	-	(15,356,507)	(7,432,797)	(7,923,710)
17	Ending Balance	31,654,623	3,292,902	-	549,673	35,497,198	15,522,424	19,974,774
18								
19	April							
20	Starting Balance	31,654,623	3,292,902	-	549,673	35,497,198	15,522,424	19,974,774
21	Add: Injections	9,716,458	7,138,840	165,596	-	17,020,894	2,691,176	14,329,718
22	Less: Withdrawals	(4,520,029)	(1,386,688)	(165,596)	-	(6,072,313)	(1,805)	(6,070,508)
23	Ending Balance	36,851,052	9,045,054	-	549,673	46,445,779	18,211,795	28,233,984
24								
25	May							
26	Starting Balance	36,851,052	9,045,054	-	549,673	46,445,779	18,211,795	28,233,984
27	Add: Injections	17,011,602	4,915,004	-	-	21,926,606	5,687,658	16,238,948
28	Less: Withdrawals	(443,831)	(88,046)	-	-	(531,877)	-	(531,877)
29	Ending Balance	53,418,823	13,872,012	-	549,673	67,840,508	23,899,453	43,941,055

450

Source: Data taken from NICOR 002671; GS-15 Exhibit A, page 2 of 2

451 **Q. Does the third party storage activity affect the cost of gas stored by Nicor Gas for**
452 **potential sale to PGA customers?**

453 **A.** No. The cost of gas stored by Nicor Gas for potential sale to its PGA customers is based
454 on the Company's total firm and spot gas purchases in 2003, including fixed and variable
455 gas supply and transportation costs. Storage activities (injections and withdrawals) are

not part of this calculation. Based on the Company's data provided in Exhibit 3 to Staff data request GS-1(3) (Nicor Gas Ex. 7.6 at NICOR 000344-345), the following table summarizes the weighted-average cost of gas for 2003, as estimated as of October 2003.

Table 5

Summary of Nicor Gas Company's Cost of Gas
Calculation for 2003 (Nov & Dec est.)

All Spot and Firm Purchases

Line No.		Total Quantity (MMBtu)	Total Costs	Cost per MMBtu
1	January	32,334,536	\$ 184,506,441	\$ 5.7062
2	February	33,399,097	\$ 241,836,766	\$ 7.2408
3	March	25,883,830	\$ 239,995,535	\$ 9.2720
4	April	29,251,121	\$ 154,941,523	\$ 5.2969
5	May	27,378,669	\$ 150,866,940	\$ 5.5104
6	June	25,066,593	\$ 145,658,580	\$ 5.8109
7	July	25,404,987	\$ 134,288,432	\$ 5.2859
8	August	27,666,194	\$ 137,877,228	\$ 4.9836
9	September	20,281,058	\$ 100,574,814	\$ 4.9591
10	October	28,728,614	\$ 134,924,679	\$ 4.6965
11	November	17,070,000	\$ 84,266,911	\$ 4.9366
12	December	20,410,000	\$ 103,705,341	\$ 5.0811
13	Year to Date	312,874,699	\$ 1,813,443,190	\$ 5.7961

Q. Were the Company's spot gas purchases abnormally high in February and March of 2003?

A. No. A review of Exhibit 3 to Staff data request GS-1(3) (Nicor Gas Ex. 7.6) shows that firm gas purchases for February and March 2003 were 31,436,567 MMBtu and 25,772,508 MMBtu, respectively. Comparing these values to the Total Quantity at Lines

2 and 3 of Table 5, above, shows that most of the gas purchased in these two months was firm gas – gas that was previously contracted to be delivered on a firm basis. The differences in these respective monthly quantities were the net spot gas quantities of gas purchased: 1,962,530 MMBtu for February and 111,322 MMBtu for March. Spot gas represented 5.9% of the gas purchased in February and 0.4% of gas purchased in March. When compared to Nicor Gas’ total firm sendout for those months, the percentage of spot gas purchases becomes even smaller. Spot purchases of flowing gas were not a significant component of Nicor Gas’ PGA portfolio during this time period. These relatively small quantities of spot gas and the temperatures in Chicago during February and March 2003 indicate to me that Nicor Gas likely would have been selling gas in mid-February and the latter half of March.³⁹

Q. Please summarize your conclusions as a result of your storage analysis.

A. My analysis of Nicor Gas’ storage activity leads me to conclude that the Hub loans do not affect the quantity or cost of storage inventories for PGA customers. The information I reviewed supported a rational basis for Nicor Gas’ understanding that Hub loans were essentially costless to the PGA customers and, in fact, provided a benefit. My analysis also allowed me to conclude that the cost of flowing gas, purchased on days that Hub withdrawals (including loans) were made, was not the appropriate cost basis for Hub loans. This, in turn, raised a question of what costs were already being recovered in Hub revenues. I address this topic next in my testimony.

³⁹ The level of off-system sales activity for February and March 2003 can be seen in the work papers of Nicor Gas witness Buckles. *See* Buckles Dir., Nicor Ex. 2.0, Attachment BOB-2, page 7.

VIII. DISCUSSION OF HUB LOANS; REGULATION OF HUB SERVICES

Q. Dr. Rearden states that the Hub “is a name used to identify services offered by Nicor that are not governed by Commission tariffs.” (Rearden Reb., Staff Ex. 4.0, 3:48-50). Under what authority does Nicor Gas provide Hub services?

A. It is my understanding that Nicor Gas’ Hub services are regulated by both the ICC and the FERC.

Q. Are the services and rates charged by the Hub provided pursuant to tariffs and rates reviewed and approved by one or both of these agencies?

A. Yes. It is my understanding that, in 2003, the Hub provided intra-state services pursuant to an ICC tariff, which contained cost-based rates, and other non-discriminatory operating terms and conditions reviewed and approved by the ICC. The Nicor Gas Hub also provided FERC-jurisdictional, inter-state storage and transportation services as a Hinshaw pipeline. The rates and services established by the ICC were contained in an Operating Statement on file with the FERC, and also were subject to FERC review and approval.

Q. What is the relevance of this regulatory oversight to this proceeding?

A. The regulatory oversight of the ICC and the FERC, with respect to Hub services and rates, indicates to me that these two agencies had determined those services to be provided on a non-discriminatory basis at rates that were just and reasonable. Accordingly, the “cost” of Hub loans and other Hub transactions was already included in the rates charged to Hub and Nicor Gas customers. The ICC periodically reconciled differences to credit PGA-related revenue to the cost of gas in a current year, and asset-related revenue to the cost of service during a rate case test year. The Commission

modified this policy, in an Order issued in October 2005, and required all Hub revenue to be credited to the firm sales and transport customers.

IX. SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

Q. Please summarize your conclusions.

A. Based on my experience and review of the information, I determined that Nicor Gas personnel: (i) had an established process for reviewing Hub loan decisions *prior* to making those decisions; (ii) were well aware of the operational effects of those decisions; (iii) consistently considered the costs and benefits of making those decisions (particularly with respect to the PGA customers); and (iv) implemented decisions that were intended to maintain the integrity of the storage fields, ensure that reliable service would not be interrupted, and minimize the cost of gas to PGA customers over time. As a result of reaching these determinations, I concluded that (i) the Company's decisions to provide Hub services in 2002 and 2003 did not cause an increase in the cost of gas paid by Nicor Gas' PGA customers, and (ii) Nicor Gas' decisions in 2002 and 2003 to use its intra-state, aquifer storage facilities to provide Hub services were consistent with the regulatory requirements at that time the rational determination that there would be no resulting effect on the cost of gas charged to the PGA customers.

Q. What is your recommendation to the Commission?

A. I recommend that the Commission approve the reconciliation, as filed by the Company, in Docket No. 03-0703.

X. CONCLUSION

Q. Does this conclude your surrebuttal testimony?

A. Yes.